IMAGE ANALYSIS FOR PHENOTYPING SETS OF MUTANT CELLS

ABSTRACT OF THE DISCLOSURE

A method described herein phenotypes a set of mutant strains in a quantitative

5   manner. Specifically, the method characterizes a cellular and subcellular architecture of mutant alleles grown in a variety of conditions using various morphological and molecular markers, combined with automated image acquisition and analysis. Phenotypic features may include the cytoskeleton, organelles, cell morphology, DNA replication state, the relationship of these features to each other, etc. From these

10   features a quantitative "fingerprint" can be generated for each phenotype. This quantitative phenotypic information is made available in a database that links genotype to phenotype. Genes characterized in this manner may be clustered into functional categories, pathways, higher order protein assemblies, and the like.